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**PATENT APPLICATION  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q78274

Koysta TAKAHASHI, et al.

Appin. No.: 10/695,402

Group Art Unit: 1772

Confirmation No.: 6874

Examiner: William P. Watkins, III

Filed: October 30, 2003

**For: ISLAND PROJECTION-MODIFIED PART, METHOD FOR PRODUCING THE SAME,  
AND APPARATUS COMPRISING THE SAME**

**DECLARATION UNDER 37 C.F.R. § 1.132**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22213-1450

Sir:

I, Masanori Kohgo, hereby declare and state as follows:

I am the same declarant who performed the experimentation described in the Declaration under 37 C.F.R. § 1.132 signed on September 22, 2005 and filed on September 29, 2005. My personal history remains as stated in that Declaration....1.132.

I have noted the Examiner's position in Paragraph 6 of Advisory Action, that is "Applicant's argument...is not supported by experimental duplication of the procedure of Inaki et al. or declaration testimony of an expert in the etching art."

I have conducted an experimental duplication of the procedure of Inaki et al. and hereinafter describe the results in the following.

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An Experimental Duplication of the Procedure of Inaki et al. (JP11-106225)

(1) Object

The object of my experimentation was to experimentally confirm that on the surface of quartz glass obtained in Inaki et al. (JP11-106225), the portions where etching was not performed remain as projections (convexes) (see Reference Numeral 8 in Fig. 1c attached hereto), whereas the portions where the etching was performed form spherical or ovally spherical concaves (see Reference Numeral 7 in Fig. 1c). Attached Figs. 1a to 1e were already explained in the "Remarks" section of the Amendment under 37 F.R. §1.116 filed on October 31, 2006.

(2) Experimentation

In view of the fact that detailed experimental conditions or procedures are not clearly described in the working example given in Inaki et al. relied on by the Examiner, my experimental duplication of the procedure of Inaki et al. was conducted under the following procedures and conditions in view of the conditions described in working example 1 of Inaki et al. Given the conditions described in working example 1 of Inaki et al., I believe the following to be a fair duplication of what one of ordinary skill in the art would have taken as the detailed conditions or procedures in the working example of Inaki et al. relied on by the Examiner. Thus, in my opinion one of ordinary skill in the art would accept the experimentation below as a fair replication of the working example in Inaki et al. relied on by the Examiner.

1) Soapy water was allowed to fall as drops onto a quartz glass substrate the surface of which had been washed thoroughly, dried (flow coating method) and then

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further dried in an oven at a temperature of 200°C for 30 minutes. A thin film having a thickness of 2.2  $\mu\text{m}$  was formed on the surface of the quartz glass.

2) The quartz glass was subjected to etching with a 25% hydrogen fluoride aqueous solution for 60 minutes.

3) The thin film was removed, and the quartz glass was washed thoroughly with pure water, and then dried.

**(3) Results**

An image obtained by observing the surface of the resultant quartz glass substrate with a laser microscope (tradename: VK-A510) manufactured by KEYENCE ~~CORPORATION~~ CORPORATION is shown in Fig. 2 attached hereto. Further, cut profiles in the case where the image was cut along the 1A-1B plane and in the case where the image was cut along the 2A-2B plane are shown in Fig. 3a and Fig. 3b attached hereto, respectively.

M.K.  
February  
16, 2007

From the results of these measurements, I confirmed that the portions where etching was performed formed spherical or ovally spherical concaves having a depth of 10  $\mu\text{m}$  or less from the substrate surface.

**(4) Conclusion**

As is clear from the results, on the surface of quartz glass obtained in Inaki et al., the portions where etching was not performed remain as projections (convexes), whereas the portions where etching was performed form spherical or ovally spherical concaves. In distinction, the surface of parts defined in the present invention has on the smooth substrate

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thereof island projections (convexes). Because the substrate does not have any concave areas, the present invention is quite different in surface structure from Inaki et al.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: February 16, 2007

Masanori Kohgo  
/s/ Masanori Kohgo

Fig. 1a

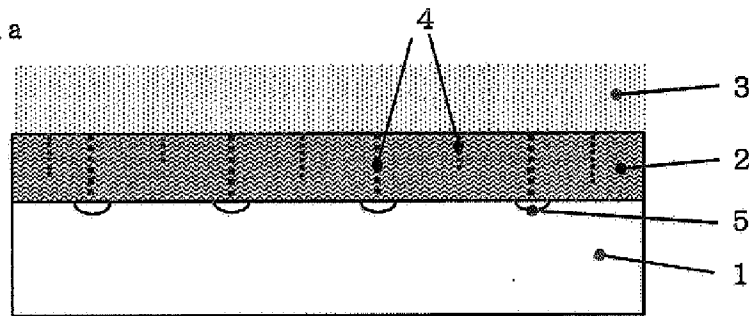


Fig. 1b

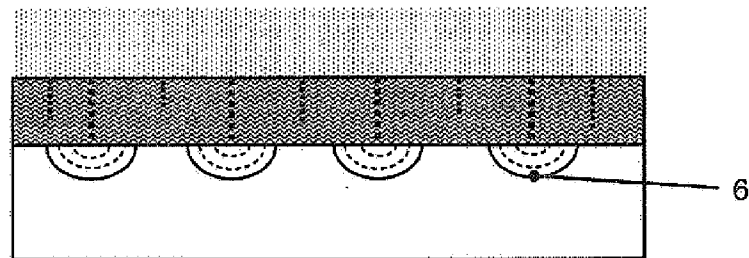
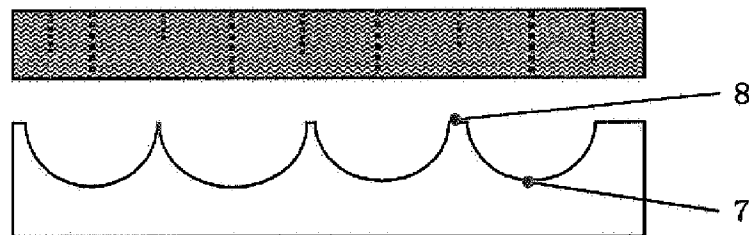


Fig. 1c



- 1: Quartz glass substrate
- 2: Thin film
- 3: An HF solution or a fluorine-containing atmosphere
- 4: Penetration portion
- 5: Etching starting portion
- 6: Portion where isotropic etching proceeds
- 7: Spherical or ovally spherical concave
- 8: Convex

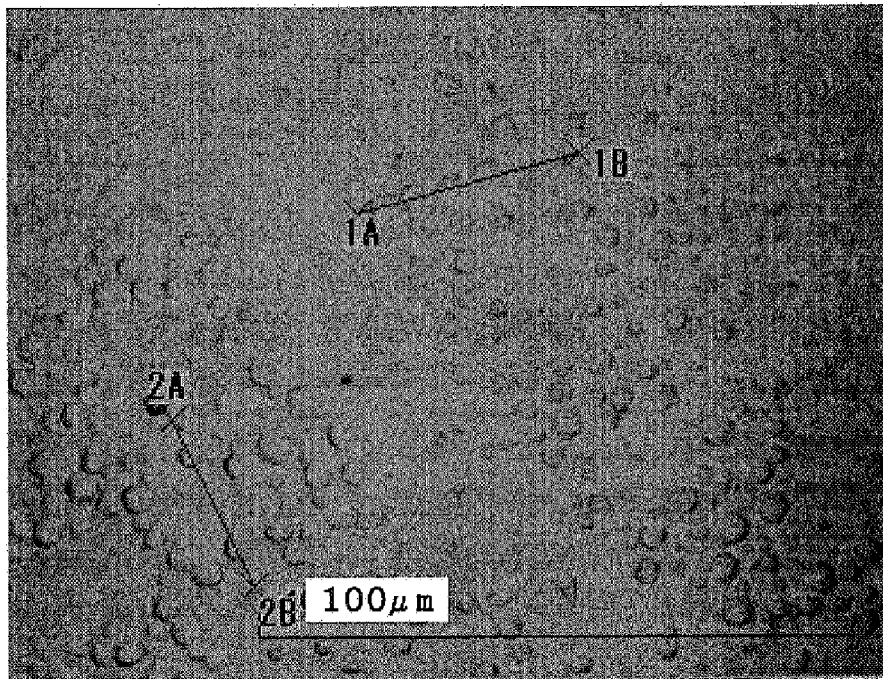


Fig.2 Laser microscope image of the quartz glass which was roughened coating soap and etching with HF

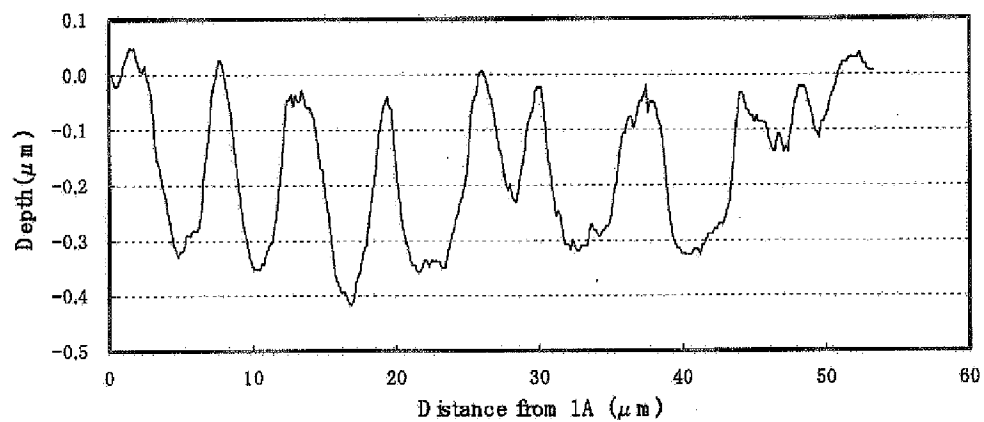


Fig.3a 1A-1B profile

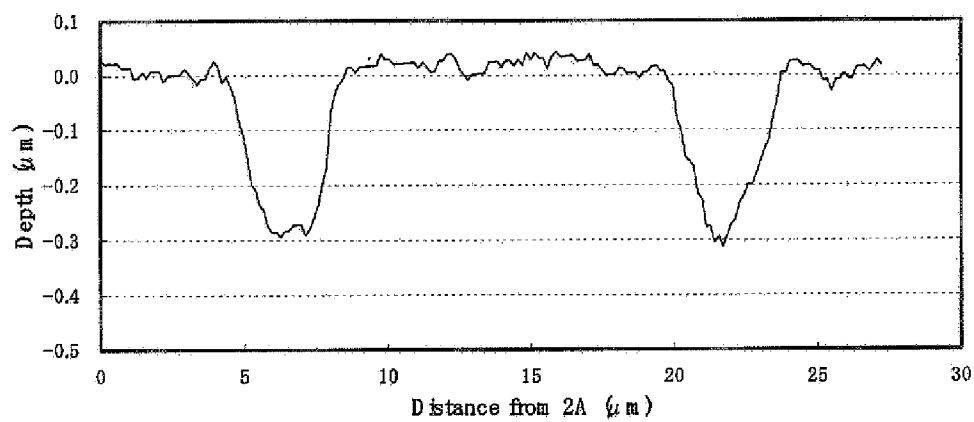


Fig.3b 2A-2B profile